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Sustainable mountain development**

Report of the Secretary-General

Summary

The present report was prepared in response to General Assembly resolution 60/198, in which the Assembly requested the Secretary-General to report to it at its sixty-second session on the status of sustainable development in mountain regions. The report describes the status of sustainable mountain development at the national, regional and international levels, including an overall analysis of the challenges ahead, and provides suggestions for consideration by the Assembly as to how to continue to promote effectively sustainable development in mountain regions around the world within the existing policy context, including chapter 13 of Agenda 21, the Johannesburg Plan of Implementation and the Millennium Development Goals.

* A/62/150.

** Submission of the report was delayed to incorporate latest information on activities in support of sustainable mountain development.

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I. Introduction

1. At its fifty-third session, the General Assembly adopted resolution 53/24, in which it proclaimed 2002 the International Year of Mountains. The resolution encouraged Governments, the United Nations system and all other actors to take advantage of the Year in order to increase awareness of the importance of sustainable mountain development. The achievements of the Year were reported to the General Assembly at its fifty-eighth session in a report transmitted by the Secretary-General (see A/58/134).

2. The International Year of Mountains built on chapter 13 of Agenda 21, which focuses on mountain issues, and was dedicated to protecting mountain ecosystems and improving the well-being of mountain people. As reported by the Food and Agriculture Organization of the United Nations (FAO) in the report of the Secretary-General to the General Assembly at its fifty-eighth session, the International Year of Mountains acted as a catalyst for long-term, effective action to implement chapter 13, as intended. It achieved as much by raising awareness of the importance of mountains to life and the need to improve mountain environments and mountain people; supporting the establishment of 78 national committees for country-level action; and strengthening partnerships with stakeholders in mountain issues, which culminated in the launch of the Mountain Partnership at the World Summit on Sustainable Development (Johannesburg, South Africa, September 2002).

3. The Year also led to the adoption of resolution 57/245, in which the General Assembly designated 11 December as International Mountain Day, as from 2003, and encouraged the international community on that day to organize events at all levels to highlight the importance of sustainable mountain development. The General Committee recommended that the provision of development assistance to poor mountain countries should be included in the General Assembly's current agenda. It was also suggested that debt relief be considered as an important means of fighting poverty in these regions.

4. In its resolution 59/238, the General Assembly decided to consider, under the agenda item entitled "Sustainable development", a sub-item entitled "Rendering assistance to poor mountain countries to overcome obstacles in socio-economic and ecological areas" at its sixtieth session. FAO prepared a report entitled "Sustainable mountain development" (A/60/309) for the sixtieth session of the General Assembly.

5. The present report is submitted in compliance with General Assembly resolution 60/198, in which the Assembly requested the Secretary-General to report at its sixty-second session on the status of sustainable development in mountain regions, under item 56 (h) of the provisional agenda. It was prepared by FAO in collaboration with Governments, relevant agencies of the United Nations system and non-governmental organizations.

II. Background and challenges

6. There is now increasing awareness that mountains are fragile ecosystems that are globally important as the source of most of the Earth's freshwater, repositories of rich biological diversity, popular destinations for recreation and tourism and areas of important cultural diversity, knowledge and heritage. Covering about one quarter of the world's land surface, mountains provide a direct life-support base for about

12 per cent of the world population, as well as essential goods and services to more than half of humankind. Yet many of the world's most impoverished and food-insecure people live in mountain regions. Consequently, there is a need to ensure the ecological health and the economic and social improvement of mountain areas, for the sake of both mountain inhabitants and people living in lowland areas.

7. Awareness of the importance of mountain ecosystems and communities has increased since the adoption of chapter 13 of Agenda 21, entitled "Managing fragile ecosystems: sustainable mountain development", at the United Nations Conference on Environment and Development in 1992. Commitment and will were strengthened during the International Year of Mountains in 2002, and mountains have gained an increasingly high profile on agendas at the national, regional and international levels. The World Summit on Sustainable Development resulted in the Johannesburg Plan of Implementation, paragraph 42 of which describes actions required to address sustainable development of mountain regions; along with chapter 13 of Agenda 21, it serves as the overall policy framework for sustainable mountain development.

8. Despite increased recognition of mountain issues and tangible results, there are still significant constraints to alleviating poverty, averting environmental degradation and attaining sustainable development in mountain regions that is congruent with the Millennium Development Goals.

9. Five years on from the International Year of Mountains, the challenges remain. Mountain communities and their environments are still vulnerable to growing demands for water and other natural resources, expanding tourism, greater rates of out-migration, disproportionate incidences of conflict and the pressures of industry, mining and agriculture in an increasingly globalized world. At the same time, the threats and consequences of global climate change are providing new challenges for mountains and mountain people that require urgent attention and concerted efforts to resolve. There is a clear need for higher levels of funding and investment in mountain areas, enhanced coordination and collaboration, and a stronger enabling environment with more supportive laws, policies and institutions.

III. National action

10. Action at the country level is increasingly coordinated at the national level by multi-stakeholder groups with representation from Governments, international organizations and civil society groups. During the International Year of Mountains in 2002, 78 national committees were set up in Africa, Asia, Europe, Latin America and the Near East to create awareness of mountain issues, foster support and catalyse action at the national level. Some of these committees have evolved into more permanent bodies and coordination mechanisms.

11. As it is beyond the scope of the present report to describe the multitude of events, activities and initiatives undertaken by countries for the sustainable development of mountain regions, the following section provides selected examples and highlights of action at the national level.

A. Africa

12. In Kenya, the Ogiek Indigenous Community in the montane Mau forest complex are mapping their ancestral territories in efforts to preserve their cultural heritage, secure ancestral land, and manage their commonly shared natural resources. Traditional knowledge is being integrated with modern participatory geographic information system technologies and approaches to document and present their ancestral entitlements.

13. In the Lebialem Highlands of Cameroon, an innovative community-led and managed microfinancing mechanism has been created. Over 2,000 people have already been mobilized through the Community Fund for Rural Livelihoods to engage in beekeeping, wildlife domestication, livestock and tree crop farming. It is anticipated that this Fund will be scaled up to form the Cameroon Indigenous People's Fund for Conservation and Development.

14. The Democratic Republic of the Congo is striving to protect and rebuild environments after years of conflict. The country's National Environmental Action Plan highlights specific activities related to mountain development designed to reduce pressure on rainforest on the Guinea-Congo border, and rehabilitate and manage protected rainforest areas. Priority actions include a national mountain development strategy to favour populations and strengthen institutional and administrative capacity.

15. Ghana's national International Year of Mountains committee — composed of Government representatives and non-governmental organizations (NGOs) — has been tasked to draft a national strategy and action plan for sustainable mountain development with the support of the Ministry of Environment and Science. The country has also developed various alternative livelihood projects in mountain areas to create new income opportunities, minimize deforestation and deter out-migration from mountain areas.

B. Asia

16. The Government of the Islamic Republic of Iran has established a Subcommittee on Mountains in the Department of the Environment. The multi-stakeholder committee is comprised of representatives from relevant Government ministries, as well as intergovernmental agencies and NGOs such as the Mountain Environment Protection Society — the first environmental NGO in the country. One of the Subcommittee's first priorities is to devise an information system on the country's mountains.

17. In Kazakhstan, a multi-donor project is supporting efforts by mountain producers to reintroduce and benefit from a traditional handicraft — felting — as a way of sustainably using local resources to combat unemployment. This has involved training seminars on new product and design technologies and exchange visits between producers. In 2006, a regional trademark, Central Asian Mountain Product, was registered with assistance from the Central Asian Mountain Partnership Programme.

18. In Tajikistan, many areas in the Pamir Mountains are on the verge of environmental collapse: an estimated 90 per cent of forests have been cut as a fuel

source for rural communities. The Social Enterprise and Environmental Development System (SEEDS), which became the first ecologically based NGO in the country in 2007, is helping rural communities identify unused, misused, mismanaged or overlooked natural and human resources to encourage sustainable energy use, enterprise development and ecological stability.

19. The Government of Nepal has turned over conservation areas surrounding Kangchenjunga — the world's third highest mountain — to a coalition of local communities and institutions. This devolution of authority to the Kangchenjunga Conservation Area Management Council is an historic step in devolving power to local populations, especially with regard to the monitoring, management and use of natural resources and the equitable sharing of benefits.

C. Europe

20. In 2007, the Government of Romania adopted a law to establish the Romanian National Agency for Mountain Areas. Special offices devoted to mountain issues will be set up in the local departments of agriculture and rural development in the 28 counties with mountain areas. In this new structure, professional training centres will support the establishment of professional mountain farmers' organizations. The creation of this national body for mountains followed an intensive lobbying process by parliamentarians and civil society.

21. In Italy, the Code of Mountain Ethics is part of a project informing residents and tourists of environmental issues in the country's Valle d'Aosta region. Produced by the region, with support from the Government and the European Union, the code provides practical advice (in Italian, English and French) on mountain tourism, etiquette, safety and responsibility. It also contains strong messages on the principles of environmental sustainability.

22. In Turkey, the Government is working with partners such as the International Fund for Agricultural Development to boost employment and foster new businesses in the remote mountainous regions of Diyarbakir, Batman and Siirt provinces. The project supports new non-farming opportunities and expands existing profitable businesses by improving access to markets.

23. In France, the renovated Maison des parcs et de la montagne (House of Parks and Mountains) in the town of Chambéry in the French Alps is dedicated to promoting the development and protection of Alpine environments. It gathers under one roof key actors and organizations working towards sustainable mountain development in the European Alps and provides educational facilities for the public.

D. Latin America

24. Argentina has established a Government committee dedicated specifically to mountain development. Its creation was motivated by the extensive work undertaken on mountain issues by stakeholders in the country during the International Year of Mountains, as well as an intensive three-year collaborative process with key Government agencies and institutions. This new committee will coordinate future national initiatives to develop mountain regions and communities, with a particular focus on institution-building and resource mobilization.

25. Out-migration from mountains is a common phenomenon in many countries. This trend is being reversed, however, in Cuba through the Plan Turquino National Commission. This special programme for the island's mountainous areas promotes sustainable food production, supports organic products for export and reaps the maximum amount of timber, coffee, cacao and fruit with the minimum impact on mountain ecosystems. The Commission's wide-ranging activities to sustain and develop mountain communities and infrastructures have led to a sharp decrease in migration to the lowlands.

26. An important environmental initiative in Colombia is the recent creation of the non-profit Organization for Environmental Education and Protection. Its expeditions for young people teach them about social, cultural, historical and also environmental aspects of mountains as well as lowland regions. In addition, the Organization plans to support specific grass-roots programmes promoting sustainable development and community-based solutions to environmental problems.

27. In Peru, four mountain lakes in the Andes (Acopia, Pampamarca, Asnacocha and Pomacanchi) are being saved from severe environmental threats and deterioration. The Recovery of the Circuit of Four Lakes Partnership, composed of indigenous peoples, NGOs and local communities is cleaning the lakes and banks of waste, protecting biological diversity and assisting communities in preventing future contamination. In addition, the institutional setting for mountain development in Peru continues to be strengthened by the National Working Group on Mountain Ecosystems, which is implementing its strategic national plan entitled "The Peruvian Mountain Agenda: towards 2020".

E. North America

28. The Mountain Studies Institute aims to enhance the understanding and sustainable use of the San Juan Mountains in Colorado through research and education. An ongoing study and outreach campaign entitled "Air quality in the San Juan Mountain high country", is collecting data to determine the current risk posed by mercury deposition. Mercury was selected as the focus of the study because of concerns expressed by various stakeholders, including land managers, watershed groups, residents, elected officials, and health professionals.

29. During the past several decades, dozens of new and exotic plant species have invaded the Appalachian highlands in the United States of America, creating what some researchers describe as one of the most serious threats to ecosystems in the region. The Appalachian Highlands Invasive Species Project is developing a community-based research, education, and demonstration site at the Mountain Institute's Spruce Knob Mountain Center in West Virginia, to develop methods for the control of invasive plants and the restoration of native plants.

30. The Bow Valley Mountain Forum is a web portal serving several small mountain communities near Banff, in the Canadian province of Alberta. Launched in 2006, the portal focuses on community events, businesses and activities that affect economic, social and environmental sustainability in the region. Users build the site and post information themselves, free of charge, much like a large community bulletin board. The Bow Valley Mountain Forum is a programme of Mountain Culture at the Banff Centre.

IV. International initiatives

A. Mountain Partnership

31. The Mountain Partnership (originally known as the "International Partnership for Sustainable Development in Mountain Regions") is a multi-stakeholder, voluntary alliance dedicated to improving the well-being, livelihoods and opportunities of mountain people and protecting mountain environments around the world. Launched as a Type 2 outcome of the World Summit on Sustainable Development in September 2002, the Mountain Partnership provides a cohesive framework and platform in which to enhance collaboration in the implementation of both chapter 13 of Agenda 21 and the Johannesburg Plan of Implementation, which called for on-ground action at the policy, programme and project levels. As of August 2007, the Partnership has 143 members: 47 countries, 15 intergovernmental organizations and 81 major groups organizations (e.g., civil society, NGOs and the private sector).

32. The Mountain Partnership secretariat, hosted since 2003 by FAO and funded by the Governments of Italy and Switzerland, supports members' collaborative action, promotes knowledge management, brokerage functions and communication exchange. The secretariat also helps members identify and mobilize resources and investments for the sustainable development of mountains, by providing information on the availability of funds from all possible sources.

33. Members' collaborative activities, or "initiatives" are focused on thematic areas (presently including biodiversity, education, gender, policy and law, research, sustainable agriculture and rural development in mountains, sustainable livelihoods and watershed management) and geographic areas (presently including the Andes, Central America and the Caribbean, Central Asia, East Africa, Europe, and the Hindu-Kush Himalaya region).

34. During 2005-2007, members have joined together to work on further specific areas of interest in response to emerging issues and priority needs and concerns, including promoting high-quality, high value mountain products, evaluating microfinance opportunities for mountain areas, studying the potential of broadband communications to bridge the digital divide between highlands and lowlands and promoting twinning efforts between local authorities and mountain communities in the North and South for decentralized cooperation.

35. Collaboration within and for the Mountain Partnership is stimulated by a communications network which disseminates information, connects members, and promotes the exchange of experiences, skills and resources. Services and products include a multi-language website and monthly newsletter (in English, French and Spanish). Communication also focuses on encouraging dialogue and networking between members and in building electronic communities of practice and knowledge. These services are developed through online member and funding databases, a Mountain Calendar of Events and a series of thematic e-consultations, organized by the secretariat in close collaboration with the Mountain Forum.

36. The Mountain Partnership secretariat, through the invitation of the General Assembly in its resolution 60/198, presented a report entitled "The Mountain Partnership: activities and achievements" to the Commission on Sustainable Development at its fourteenth session (E/CN.17/2006/12). That report provided an

update on progress, achievements and challenges since the inception of the Mountain Partnership and recommendations for its future impact and effectiveness. Starting in 2007, the Mountain Partnership secretariat is decentralizing some of its core functions to regional hubs in efforts to better respond to the emerging needs of members, maximize existing networks and strengthen its collective action and impact worldwide.

B. Education

37. United Nations University is undertaking a range of initiatives to improve human livelihoods and protect fragile mountain ecosystems, with a particular focus on sustainable land management. In Central Asia, for example, three training courses acquainted experts with participatory methodologies for sustainable development appraisal, policy and institutional framework capacity assessment, and the use and management of geographic information systems (GIS) databases. The trained experts subsequently used these analytical tools to assess the scope and severity of land degradation at eight pilot sites in the Pamir-Alai mountains, and develop, jointly with local, national and international stakeholders, a strategy for addressing the problem through a four-year-long project entitled "Sustainable land management in the High Pamir and Pamir-Alai Mountains". This project, scheduled to begin in the second half of 2007, will receive financing from the Global Environment Facility (GEF) and other national and international partners.

38. The Centre for Development and Environment at the University of Berne, Switzerland, hosts the secretariat of World Overview of Conservation Approaches and Technologies — a network of Governments, national and international institutions and civil society organizations that aims to ensure that local soil and water conservation knowledge and experience, including that related to mountains, is shared and used globally. In late 2006, the World Overview of Conservation Approaches and Technologies published a global overview on soil and water conservation approaches entitled *Where the land is greener: case studies and analysis of soil and water conservation initiatives worldwide*, which also included policy recommendations for decision makers.

C. Gender

39. Mountain women face many of the same challenges that are faced by women throughout the developing world, but their work is intensified by altitude, steep terrain and isolation. Two landmark events held in 2002, a global conference on the theme "Celebrating mountain women" and the Bishkek Global Mountain Summit, highlighted gender inequalities and underlined the international community's commitment to pursue gender equity as a prerequisite for meaningful mountain development.

40. The Women of the Mountains Conference, held in Orem, Utah, United States, in March 2007, organized by Utah State University and the Utah-Russia Institute, built on this momentum and emphasized practical steps to ensure an improvement of women's status in mountain communities around the world. The adopted Orem Declaration of Mountain Women, underlines, inter alia, the need for collaboration with Brigham Young University (United States) in the collection and compilation of

data on women in mountainous areas, through further development of the WomanStats database, which will allow for improved analysis and understanding of the condition of women in mountains around the world and the development of interventions tailored to their specific needs.

41. The International Centre for Integrated Mountain Development, based in Nepal, advocates for mountain women's issues in Hindu-Kush Himalaya as well as influencing global strategies. Through various initiatives such as workshops, research and publications, the Centre aims to influence and frame mountain policies in making them gender sensitive and socially inclusive. The Centre also helps regional networks of grass-roots mountain women advocate for mountain women's rights and participate in decision-making processes.

D. Policy and law

42. Good policies are among the most important determinants of successful and sustainable mountain development. Unfortunately, few countries have developed specific policies to address mountain regions. Often, national Governments apply policies and laws created for lowland areas that do not take into account the fragility of mountain environments nor the singular needs, interests and priorities of mountain people.

43. The FAO Sustainable Agriculture and Rural Development in Mountain Regions Project aims to facilitate the design, implementation and evaluation of policies for sustainable agriculture and rural development in mountains. Its policy assessments in six mountainous regions (i.e., Andes, Carpathians, Central America, Hindu Kush Himalaya, Mediterranean region and South-East Europe) have studied the strengths and weaknesses of existing mountain policies, identified key principles for improved policy packages and processes, and prepared a practical guide for policy assessment.

44. Most countries have not yet adopted mountain-specific laws, preferring to focus on the protection and development of mountains through existing sectoral legislation. However, the 2006 FAO publication entitled *Mountains and the Law: emerging trends* looks at the steady development of mountain legislation in a few countries such as Algeria, Bulgaria, France, Georgia, Italy, Kyrgyzstan, Romania, the Russian Federation (Republic of North Ossetia-Alania), Switzerland and Ukraine.

E. Risks and hazards

45. Owing to their nature, mountain ecosystems and the people who live in or near them face greater risk from natural hazards — floods, droughts, volcanic eruptions, hurricanes, avalanches, debris flows, earthquakes and landslides. In recent years, a series of international initiatives have been taken to create awareness of risks, and reduce and manage their effects.

46. The International Consortium on Landslides leads a global, multidisciplinary programme on landslides. Supported by United Nations bodies, intergovernmental programmes, the Government of Japan and other governmental bodies, the Consortium fosters landslide research and capacity-building, integrates geosciences

and technology, and coordinates international expertise in risk assessment and mitigation studies. The Consortium has adopted the 2006 Tokyo Action Plan on the International Programme on Landslides, which foresees strengthening human resources and boosting funding to ensure adequate risk assessment and identify hazard zones.

47. The earthquake that devastated a vast area between Pakistan, India and Afghanistan in October 2005 killed over 80,000 people and left millions of mountain dwellers homeless. The Mountain Institute, Mountain Forum and the International Centre for Integrated Mountain Development launched an international appeal for tents for victims of the South Asia earthquake, which enabled the purchase and delivery of winterized tents and heaters.

F. Climate change

48. The implications of climate change for specific mountain ecosystems and regions are not well known and are under discussion. It is vital, however, to study and monitor the biological, physical and environmental health of mountains in efforts to better understand, manage and mitigate the negative effects of climate change. Many organizations around the world are working towards these goals through advocacy, research, education and action on the ground.

49. In North America, the Sierra Nevada Alliance promotes action for adaptation to climate change to protect environments and local economies. Its resource kit entitled *Sierra Climate Change Toolkit: Planning ahead to protect Sierra natural resources and communities* provides a range of scenarios and recommends specific actions. The United States-based Mountain Studies Institute has joined research teams around the globe in a long-term study of climate change impacts in fragile alpine ecosystems with the installation of a Global Observation Research Initiative in Alpine Environments (GLORIA) site high in the San Juan Mountains of Colorado, United States.

50. In Africa, recent droughts and floods have demonstrated the continent's vulnerability to climate variability and change. The United Nations Framework Convention on Climate Change African Regional Workshop on Adaptation, held in Accra, in September 2006, highlighted African concerns and identified concrete adaptation measures in the areas of agriculture and food security, water resources and natural ecosystems.

51. In Asia, the Himalayan glaciers provide a freshwater reserve affecting almost one third of humanity. But studies show that most Himalayan glaciers are receding at increasingly accelerated rates. The report entitled *The Impact of Climate Change on Himalayan Glaciers and Glacial Lakes*, produced by the International Centre for Integrated Mountain Development with the United Nations Environment Programme (UNEP), provides detailed case studies on the impact of warming temperatures on glaciers and glacial lakes, warns of the increasing likelihood of glacial lake outburst floods and calls for early warning and mitigation measures to avert disaster.

52. In Europe, the annual symposium of the International Commission for the Protection of the Alps, held in Bad Hindelang, Germany, in May 2006, focused on the growing threat to Alpine regions posed by natural hazards and the impact of

climate change on Alpine tourism. The resolution entitled "Climate protection and climate change adaptation strategies", adopted by the Commission, calls upon the European Union, the bodies of the Alpine Convention, the Alpine States and NGOs to intensify their climate protection efforts and draw up sustainable strategies to tackle the growing repercussions of climate change.

53. In the Swiss Alps, the Jungfrau-Aletsch-Bietschhorn (a United Nations Educational, Scientific and Cultural Organization Natural World Heritage Site) is noted for the information it contains about ecological and biological processes, the formation of mountains and glaciers, and ongoing climate change. The Centre for Development and Environment at the University of Berne, Switzerland, leads the site's Management Centre which is developing a long-term research and monitoring concept.

54. Connectivity conservation is a viable means of managing and minimizing the effects of climate change in mountains. It involves creating systems of core protected areas that are functionally linked and buffered in ways that maintain ecosystem processes and allow species and populations to survive, move and adapt. The Papallacta Declaration adopted at the World Conservation Union (IUCN)/World Commission on Protected Areas workshop, held in Termas de Papallacta, Ecuador, in November 2006, pledges international commitment to engage in connectivity conservation in and around the mountain regions of the world.

G. Global change research

55. Global change research looks not only at climate change but also at the global issues that affect change in mountain populations and their environments, such as population growth and changes in economic systems. Significant steps have been made in recent years to further our understanding and knowledge of the causes and consequences of global change and generate collaborative efforts to address challenges at all levels.

56. The Mountain Research Initiative promotes and coordinates global change research in mountain regions. It conducts a scientific programme that detects signals of global environmental change in mountain environments, defines the consequences of global environmental change for mountain regions as well as the lowland systems dependent on mountain resources, and informs sustainable land, water, and resource management for mountain regions at local to regional scales. The Mountain Research Initiative convened the international Open Science Conference, held in Perth, Scotland, United Kingdom, in October 2005, the final event of the European Union-funded Global Change in Mountain Regions project, which communicated results between scientists from industrialized and developing countries and produced a long-term framework for research known as the Global Change in Mountain Regions Research Strategy.

57. The Mountain Research Initiative supports the regional networks who are implementing the GLOCHAMORE Research Strategy. In Latin America, the Initiative co-sponsored the conference on Climate Change: Organizing the Science for the American Cordillera, held in Mendoza, Argentina, in April 2006, which summarized current research and identified scientific gaps and needs to support adaptation to global change along the American Cordillera and created the American Cordillera Transect for Global Change Research, a network of scientists devoted to

cooperation and to optimizing science by data sharing and knowledge. In Africa, the Initiative and partners laid the foundations of a global change research network for African mountains at the workshop on the same theme, held in Kampala, in July 2007. In Europe, the Mountain Research Initiative and partners have lobbied successfully for the inclusion of mountains in the European Union's call for the Seventh Framework Programme for Research and Technological Development — the European Union's chief instrument for funding research over the 2007-2013 period.

H. Other research areas

58. The Mountain Invasion Research Network, launched in 2005, integrates surveys, monitoring and experimental research on plant invasions into mountains at a global scale. The Network's organization of researchers, managers and practitioners has defined a multifaceted approach to understand the increasing alien plant invasions into mountain ecosystems, facilitate communication and exchange of expertise, and provide management guidelines to address this urgent problem. The Network is associated with the global mountain research community and plans to strengthen cooperation in research initiatives in the future.

59. In the Himalayas, Ev-K²-CNR (Italian National Research Council) Committee oversees the Ev-K²-CNR Project which has become one of the main international cornerstones of high-altitude and remote-area scientific research. The Committee's ABC (Atmospheric Brown Clouds)-Pyramid station, at the base of the Nepali side of Mount Everest, is the highest atmospheric pollution monitoring station in the world. It performs thorough analysis of atmospheric composition at high altitude and investigates the circulation of pollutants and aerosols, their influence on oscillations in the monsoon cycle, and pressure on the atmospheric water and energy balance.

I. Biodiversity

60. The Convention on Biological Diversity work programme on mountain biodiversity, adopted at the seventh Conference of the Parties in 2004, aims to establish "regional and transboundary collaboration and the establishment of cooperative agreements" (see decision VII/27, annex). It also recommends strengthening collaboration with the Mountain Partnership and regional conventions on mountains for the conservation, sustainable use and the fair and equitable distribution of benefits. Since then, an increasing number of collaborative activities on biodiversity relevant to the Convention have taken place within the framework of the Mountain Partnership, in relation to the Andes, Carpathians, Balkans, Caucasus, European Alps and the Hindu-Kush Himalaya.

61. An example was the Gran Paradiso National Park and Sagarmantha National Park Twinning Programme Startup Workshop, held in Cogne, Italy, in October 2006, organized by Mountain Partnership members including the European Academy, the International Centre for Integrated Mountain Development and UNEP. At the event, representatives of Gran Paradiso, the oldest national park in Italy, launched a partnership with the Sagarmatha National Park in Nepal to explore future technical cooperation and the exchange of professional training and scientific knowledge. The adopted Cogne Declaration sets out areas of collaboration and acknowledges that

the Twinning Programme will be further developed within the framework of the Mountain Partnership. This landmark agreement between mountain parks in Italy and Nepal promises to serve as a model instrument for biodiversity management in their respective regions and beyond.

62. The Global Mountain Biodiversity Assessment of DIVERSITAS, an international programme of biodiversity sciences, contributes input to policy on the conservation and sustainable use of biodiversity in mountain regions and coordinated the chapter on mountain ecosystems in the United Nations Millennium Ecosystem Assessment of 2005. The Global Mountain Biodiversity Assessment also encourages the global effort to mine geo-referenced archive databases on mountain organisms, build new biodiversity databases, and to link them with each other as well as with geophysical databases. It also coordinates a worldwide network of field experiments on land use and biodiversity in steep mountain terrain. Projects are already underway in the Bolivian Altiplano, Central Caucasus (Georgia), European Alps (Austria, France and Switzerland), and Himalayas (China).

J. Watershed management

63. One of the key challenges in attaining the Millennium Development Goals is controlling watershed degradation and the negative impacts of socio-economic change on mountain ecosystems. Recent initiatives are improving understanding and approaches to watershed management.

64. During 2002-2003, FAO and its partners undertook a large-scale assessment and global review of the current status and future trends of integrated and participatory watershed management. Experts from four continents contributed to the assessment through regional workshops in France, Kenya, Nepal, Peru, and an international conference in Italy. In 2006, FAO and collaborating institutions widely disseminated findings and a resource book entitled *The new generation of watershed management programmes and projects*, which provides a critical summary of the state of the art of watershed management, and outlines a new approach based on the principles of adapting, collaborative and results-oriented management.

65. The new approach to watershed management is currently being tested and applied in several FAO-assisted field programmes, including a major post-earthquake rehabilitation project in the mountain areas of Pakistan, a World Bank programme for strengthening watershed management in Tajikistan, and a Programme for Integrated Management of the Fouta Djallon Highlands (West Africa), supported by GEF. Interest in adopting the new approach has also been expressed by the Mekong River Commission and by the Governments of Ethiopia, Lesotho and the Libyan Arab Jamahiriya.

66. In addition, several policy initiatives have recently been implemented across regions as part of the global effort to revisit watershed management for sustainable mountain development. These include, inter alia: the adoption of the European Union Water Framework Directive by the International Network of Basin Organizations; the organization of the twenty-fifth session of the European Forestry Commission Working Party on the Management of Mountain Watersheds, in 2006, an electronic conference held by the Latin American Watershed Management Network (Red Latinoamericana de Manejo de Cuencas Hidrográficas); and the creation of a working party on mountain watersheds by the North American Forestry Commission.

V. Regional and interregional initiatives

67. Mountain ranges are often shared among several countries. However, as was highlighted during the International Year of Mountains and since, regional and subregional cooperation is often limited or hampered by national legislation. Innovative legal arrangements are essential for effective management of areas shared among two or more countries. Indeed, the report of the Secretary-General on the International Year of Mountains, 2002 (A/58/134) recommended strengthening regional and transboundary cooperation started before 2002 and supporting transboundary approaches to sustainable development of mountain ranges and information sharing. These efforts continue around the world.

68. The Alpine Convention is a treaty under international law between Austria, Switzerland, Germany, France, the Principality of Liechtenstein, Italy, the Principality of Monaco, Slovenia and the European Community. For the European Alps, the Alpine Convention and its protocols are the most significant basis for their preservation and international collaboration. The brochure, entitled *International Mountain Partnerships*, was prepared by Austria in its recent presidency of the Alpine Convention and provides an overview of the existing collaborative activities of the Convention's member countries with the Carpathians, Caucasus and Central Asia (Tian Shan, Pamir).

69. Eight partners from six Alpine countries (Austria, France, Germany, Italy, Slovenia, Switzerland) participate in the DIAMONT (Data Infrastructure for the Alps-Mountain Oriented Network Technology) project. This European Union-supported project aims to promote a common understanding of sustainable development in the Alpine space: it takes into account the expectations of experts for regional development, as well as the needs of the Alpine population and disseminates knowledge and data on the spatial, economic, social and natural structure of the Alps. It is hoped that the results of the project (ending in 2008) will supply methodologies adaptable to other European mountain areas and regions.

70. The Carpathian region which spans the Czech Republic, Hungary, Poland, Romania, Serbia, Montenegro, Slovakia and Ukraine is not only one of Europe's largest mountain ranges but also contains Europe's greatest reserve of pristine forest and a wealth of biodiversity. The Carpathian Convention, an international treaty to conserve the wildlife, landscapes and cultural heritage of the Carpathian Mountains, entered into force on 4 January 2006. The Convention provides the legal framework for cooperation and multisectoral policy coordination, a platform for joint strategies for sustainable development and a forum for dialogue between all involved stakeholders in the region.

71. Importantly, the Carpathian Convention also provides a framework for several other partnerships in the region, inter alia, the Carpathian Network of Protected Areas, the Carpathians Environmental Outlook, the CADSES (Central, Adriatic, Dankbian and South-Eastern European Space) Carpathian Project (involving 19 public and private partners from eight countries), and the starting up of a Carpathian Research Initiative.

72. The First Meeting of the Conference of the Parties to the Carpathian Convention, held in Kyiv, in December 2006, organized by the UNEP Vienna-Interim Secretariat of the Carpathian Convention, adopted rules of procedure and financial rules of the Convention, and its cooperation with other conventions and

international bodies. In particular, the meeting signalled the strengthening of cooperation between the Alps and the Carpathians, with the signing of a Memorandum of Understanding by their participating secretariats and presidencies. Specific areas of collaboration include spatial planning, air pollution control, waste management, cultural heritage and traditional knowledge.

73. The Carpathian model of regional cooperation holds valuable lessons for other transboundary mountain regions of the world. UNEP, which has played a key role in developing the Carpathian Convention, has received requests from mountain regions in the Balkans and Caucasus to support initiatives, collaborative mechanisms and cooperation inspired by its work on the Carpathians. For example, the first intergovernmental meeting for the preparation of a legal framework for the Protection and Sustainable Development of Mountain Regions in South-Eastern Europe "SEE (Balkan Region) Mountain Convention Process", held in Bolzano, Italy, in November 2006, organized by UNEP and the Italian Ministry of Environment and Territory, resulted in the South Eastern Europe Statement and the Caucasus Outcomes — both of which underline a shared commitment towards enhancing regional cooperation in these mountainous areas and in moving processes forward within the framework of the Mountain Partnership.

74. An important constraint to sustainable development in mountain areas has been the lack of empowerment of local authorities and mountain communities. Local Agenda 21 — originating at the United Nations Conference on Environment and Development held in 1992 — recognizes that local governments, and the wider communities they represent, are ideally positioned to take the lead in achieving ecologically sustainable development through integrating environmental, social and economic goals on a local level. Efforts are under way within Central Asia to address these issues and share experiences beyond the region. The meeting on the role of local governance in sustainable development, held in Bishkek, in November 2005, organized by the Alliance of Central Asian Mountain Communities and the Central Asian Mountain Partnership, promoted cooperation and exchange of experiences of local governance among communities and institutions in the mountains of Central Asia, the Alps, the Caucasus, the Carpathians, and the Altai, and adopted the Bishkek Resolution for that purpose. In addition, the Regional Environmental Centre for the Caucasus has developed pilot projects for Sustainable Development of Mountain Regions of the Caucasus — Local Agenda 21. In August 2006, representatives of mountain villages from Armenia, Azerbaijan, Georgia and the Russian Federation met in the mountain village of Chiora in Georgia and established a transboundary network of mountain villages in the Caucasus.

75. In Europe, the European Association for Mountain Areas (Euromontana) works to ensure the continuation of sustainable and viable activities in European mountains through recognizing and rewarding the assets they offer society. Its European Charter for Mountain Quality Food Products, developed through a European Union research project, was officially launched in the European Parliament in Brussels in December 2005. The Charter aims to characterize, protect and promote mountain quality food products and so contribute to the sustainable development of Europe's mountain regions. As of August 2007, the Charter includes 66 signatories (from Governments to local cooperatives) from 11 countries.

76. The Italian Apennine mountain range has been endowed with a new protection and management instrument called the Apennine Convention (Convenzione degli

Appennini). The Convention — the first convention worldwide to focus fully on the role of protected areas — aims to protect biodiversity, foster mobility, promote tourism and reconcile energy needs with respect for the environment. The Convention was initiated by the Unione Nazionale Comuni Comunità Enti Montani, a national Italian institution representing the interests of mountain communities, districts and bodies.

77. The project entitled "Institutional Consolidation for the Coordinated and the Integrated Monitoring of Natural Resources towards Sustainable Development and Environmental Conservation in the Hindu-Kush-Karokoram-Himalaya Mountain Complex" is a regional initiative aimed at consolidating the institutional capacity for systemic planning and management of socio-ecosystems at the local, national and regional levels in the Hindu-Kush-Karokoram-Himalaya region. The project, supported by the Italian Cooperation, is implemented by the World Conservation Union (IUCN) and the International Centre for Integrated Mountain Development and has a special focus on three protected areas: Sagarmatha (Everest) National Park in Nepal, Central Karakoram National Park in Pakistan and Qomolongma Nature Preserve in Tibet Autonomous Region of China.

VI. Communications and networking

78. The General Assembly declared 11 December from 2003 onwards as International Mountain Day, and designated FAO as the lead agency to coordinate worldwide observance. This special United Nations Day serves to highlight the global importance of mountain ecosystems among a wide audience (the public, Governments, intergovernmental organizations, NGOs, United Nations bodies, the private sector and the media) and to promote action at all levels for meaningful change in the world's mountains and highlands.

79. Every International Mountain Day focuses on a specific theme that represents challenges and opportunities to mountain people and environments. In 2005, the theme of International Mountain Day was sustainable tourism ("Sustainable tourism for poverty alleviation in mountain areas") and underlined that one of the main challenges is to harness mountain tourism so that it benefits mountain people and their environments, while at the same time satisfying the desires of tourists. In 2006, the Day stressed the need to manage mountain biodiversity in a sustainable manner ("Managing Mountain Biodiversity for Better Lives") and called for partnerships at all levels to promote biodiversity management that would reduce poverty, improve livelihoods, and protect mountain environments. In 2007, the theme for International Mountain Day will focus on mountains and climate change.

80. The focus of observance of International Mountain Day is at country level, where a wide range of educational, advocacy and media activities take place. As the designated lead United Nations agency to coordinate observance of the Day, FAO develops a series of communication materials to highlight thematic issues, suggest ways in which countries can celebrate the Day and facilitate action. These communication materials are packaged in trilingual CD-ROM kits (in English, French and Spanish), disseminated to key partners and made available on a special dedicated website.

81. Mountain Forum is the only electronic network dedicated exclusively to mountains. Its membership of individuals, professionals and organizations from

over 130 countries promotes sustainable mountain development through information exchange and advocacy and plays an important role in collective efforts to connect mountain stakeholders and raise mountain issues high on political agendas. Its range of services and products include membership profiles, regional and thematic e-mail discussion lists, a calendar of events, an online library and a bulletin. During 2005-2007, the Mountain Forum global secretariat and its regional nodes coordinated a series of e-consultations for the Mountain Partnership on biodiversity conservation in the Hindu-Kush Himalaya, regional cooperation in biodiversity use between the Andes and Himalaya, and sustainable agriculture and rural development in mountains.

82. An information network has been set up that utilizes information and communication technologies (ICTs) to preserve Africa's wild heritage by supporting and linking conservation initiatives throughout the continent and building local capacity for conservation. The African Conservation Network is a partnership between the African Conservation Foundation and local partner organizations in Cameroon, Kenya, Somalia and Zambia, and provides a methodology for an innovative Web-based environmental information system which could be implemented elsewhere in the world with low set-up and maintenance costs.

83. Every year mountain people are displaced by large-scale development projects for roads, dams, and mines. *Mountains and Highlands — Tales of Resettlement*, brings together first-hand accounts by the displaced in Africa (Botswana, Kenya, Lesotho, Namibia, Zambia and Zimbabwe) and Asia (India and Pakistan). This collection is part of the Panos London Oral Testimony Series, which attempts to understand the resettlement process and its aftermath, by providing first-hand accounts from the resettled themselves, those with the most direct experience of forced relocation but with the least influence on policy.

84. *Mountain Research and Development* is the only peer-reviewed international journal that deals with research as well as development in mountain areas worldwide. During 2005-2007, the journal has presented cutting-edge contributions to such key issues as poverty in mountains, mountain biodiversity, cultural diversity, climate change, energy, and migration. It also plays an important role by giving authors from the South a voice and an opportunity to access, publish and review academic research, as about half of the contributions now originate from that part of the world.

VII. Funding and financial mechanisms

85. Funding for mountain development is still inadequate. This is despite the increasing awareness of the importance of mountains and the persistently high incidence of poverty, food insecurity and vulnerability of mountain populations, particularly in the developing world. Traditional funding sources and approaches are important, but these can fail to recognize and address the specificities of mountains and mountain people. There is also undoubted potential to tap newer, more innovative financial mechanisms for mountain development, such as debt-for-nature swaps, payment for environmental services and microfinance opportunities.

86. The Mountain Areas Conservancy Project in Pakistan, funded under the GEF Operational Programme on Mountain Ecosystems, is now in its sixth and final year of implementation. This community-based project aims to protect the rich biological

heritage of seven geographically distinct conservancy areas in the Karakorum, Western Himalayan and Hindu Kush mountain ranges in northern Pakistan and has resulted in significant changes in people's attitudes and practices.

87. Recent research shows that climate change will be even more pronounced in high-elevation mountain ranges. In 2007, GEF approved a grant of $9.9 million to finance two climate adaptation projects designed to help mountain communities in Ecuador and Peru to combat problems associated with glacial retreat in the tropical Andes and improve water management in Ecuador. Lessons learned from these projects will help generate a knowledge base to inform the design of future adaptation projects in developing countries.

88. In 2006, the Government of Jamaica demonstrated its commitment to preserving the island's mountain forest reserves and national parks by launching a multi-million dollar Forest Conservation Fund. The Fund will target the Cockpit Country Forest Reserve, the Blue and John Crow Mountains Forest Reserve and National Park, the inland portions of the Negril Protected Area, the forested areas of the Dolphin Head Mountains, as well as the Rio Minho, Rio Cobre and Black River Watersheds. The Fund is the result of a 2004 debt-for-nature swap agreement between the Nature Conservancy and the Governments of Jamaica and the United States, and will result in the cancelling of some US$ 16.5 million in Jamaican debt to the United States.

89. Payment for environmental services, which compensates local land users for environmental services, has increasingly been used to manage biodiversity in mountains in recent years. For example, the Regional Integrated Silvopastoral Approaches to Ecosystem Management Project, initiated by local NGOs and financed by GEF, uses payment for environmental services to encourage silvopastoral practices in degraded pastureland in the mountains of Colombia, Costa Rica and Nicaragua. Participating land users receive direct annual payments for the environmental services they generate. Initial results show that payment for environmental services has induced positive land use changes such as improved water quality and increased bird and ant species diversity.

90. The Aga Khan Agency for Microfinance combats poverty and economic exclusion in mountain communities through its First MicroFinanceBanks in Afghanistan, Pakistan and Tajikistan and a steadily increasing number of countries. These banks, formally regulated by the central bank of the countries in which they operate, direct their services to the poor and their micro- and small enterprises. The MicroFinanceBanks services include credit, savings, payment services, money transfers, microleasing, and microinsurance.

91. The Mountain Partnership secretariat is providing information about the availability of funds for mountain activities from all possible sources on an ongoing basis. Its searchable funding database on the Mountain Partnership website contains details on the various thematic and regional areas of mountain development supported by financial institutions, foundations, multilateral development banks and donor agencies around the world. The database is complemented by online resources and tools that offer tips, practical suggestions and guidelines for funding and proposal writing.

VIII. Recommendations

92. **There has been significant progress in sustainable mountain development around the world in recent years, ranging from greater awareness about the global importance of mountains, to the strengthening and creation of institutional arrangements at the national, regional and international levels and greater collaborative action by the international community to address specific mountain issues. Nevertheless, much remains to be done, especially in the planning, implementation and evaluation of programmes on the ground in mountain communities. The General Assembly, in its efforts to be fully consistent with chapter 13 of Agenda 21, the Johannesburg Plan of Implementation and the Millennium Development Goals, may wish to reiterate some of the possible courses of action for Governments, such as:**

(a) **Encourage the continuation of existing, or the further establishment of new national committees or similar institutional arrangements, bodies and mechanisms to strengthen intersectoral coordination and collaboration for sustainable development in mountain areas;**

(b) **Assist developing countries and countries with economies in transition to formulate and implement national strategies and programmes for sustainable mountain development, through bilateral, multilateral, and South/South channels of cooperation, as well as through non-traditional arrangements such as decentralized cooperation;**

(c) **Encourage greater engagement by civil society and the private sector in the development and implementation of programmes, projects and activities related to sustainable development in mountains;**

(d) **Support the collaborative efforts of the Mountain Partnership and encourage the involvement of relevant Government, civil society and private sector institutions at the national and regional level in this evolving voluntary alliance;**

(e) **Support the continued development and implementation of communication and advocacy programmes for sustainable mountain development at all levels, to build on the awareness-raising, momentum and networking promoted by the International Year of Mountains and the opportunities provided annually by United Nations International Mountain Day on 11 December;**

(f) **Support education, extension and capacity-building programmes, particularly among local mountain communities, to further sustainable mountain development at all levels;**

(g) **Enhance awareness of the effects of climate change, as well as risks and hazards, in mountain areas and develop adaptation measures, approaches and policies to mitigate and manage impacts;**

(h) **Foster the strengthening of the role of mountain women in planning and decision-making processes that affect their communities, cultures, livelihoods and environments;**

(i) **Promote increased levels of investment and funding for sustainable development in mountain regions at the global, regional, national and**

community levels, including through innovative financial mechanisms and approaches such as debt-for-nature swaps, payment for environmental services and microfinance opportunities;

(j) Ensure that indigenous cultures, traditions and knowledge are recognized in development policy and planning in mountain regions and that, in particular, indigenous communities are directly involved in decisions and actions affecting their lives;

(k) Promote initiatives for integrated transboundary cooperation as well as strategies and approaches for sustainable activities in mountain ranges, through mutually agreed arrangements by the countries concerned and through cooperation within and between mountain regions and their respective regional and subregional conventions;

(l) Support efforts undertaken at the global, regional and national levels to effectively integrate management considerations, including mountain biological diversity and watershed conservation, into comprehensive policy approaches for the sustainable development of mountain areas.